Information About Greater Sage-Grouse Management in Malheur County, Oregon edited August 16, 2002

Introduction–

The population declines of greater sage-grouse reported throughout the west are once again leading some to the conclusion that the species should be considered for protective listing under the Endangered Species Act. The recent debate about whether it is appropriate or inappropriate to do so has been a point of discussion within the Department of Interior since the early 1980's.

This paper is intended to help the public understand some of the current thoughts, research, and applied management that pertain to greater sage-grouse on public lands in Malheur County. The amount of public land in Malheur County (over 72%) and Oregon in general makes the BLM an important player in greater sage-grouse management.

As of the summer of 2002, the minimum Oregon greater sage-grouse breeding population is estimated by the Oregon Department of Fish and Wildlife to be at least 20,000 birds.

Taxonomy (or names) – Based on recent genetic sampling, taxonomists (those whose job it is to make judgments about what constitutes a species) are revising species and subspecies definitions for sage grouse.

For instance, birds peculiar to parts of Colorado and Utah south of the Colorado River are now called the Gunnison sage-grouse (*Centrocercus* e*urophasianus minimus*. Gunnison sage-grouse are very limited in number and distribution primarily because much of their habitat has been converted to agricultural land or developed and fragmented. They do not interbreed with other varieties of sage grouse. Mono Lake sage grouse in California may also be separated into a separate subspecies or species.

Malheur County birds can be either the eastern or western varieties of greater sage-grouse depending on the location within the county. The eastern subspecies (*Centrocercus europhasianus europhasianus*) resides in the south half of the county and the western subspecies (*Centrocercus europhasianus phaios*) resides in the northern end. Their distributions correspond very closely with the Jordan and Malheur Resource Area boundaries. Again, due to genetic sampling the distinction between the eastern and western subspecies may no longer be warranted.

Reproductive capacity– Greater sage-grouse are long lived birds (four and five year old birds are not unusual) with a relatively low reproductive rate (six or seven egg clutches). In contrast, to many other upland game birds that have high levels of annual production and mortality, 60 to 80% of fall greater sage-grouse populations survive each winter. Researchers indicate that if a greater sage-grouse hen loses her nest on the initial attempt, fewer than 15% will re-nest. Their capacity to recover from population reductions is lower than that of quail or chukar.

Seasonal Grouse Movements in Malheur County–

Greater sage-grouse move throughout geographic areas and use several different kinds of habitats as seasons change. These variations in habitat preferences and needs are probably accounting for at least some of the more common misunderstandings about what they require.

Greater sage-grouse in Malheur County are not known to make long distance migrations between their summer and winter ranges as it has been reported in some other western states. However,

more study about this aspect of their life history is needed for our local area.

Based on a variety of observations made by biologists, ranchers and other agency personnel, the best insights into Malheur County grouse movements come from the southern slopes of the Oregon Canyon Mountains, the Bully Creek Watershed, and the mountain foothills located north of Vale between Tub Mountain and Cow Valley Butte.

In these areas described above, greater sage-grouse remain within their breeding ranges during the winter period (often occupying low sagebrush habitats) until heavy snowfall forces them onto lower elevations where they can find cover and food. For example, in the course of contract helicopter work around Westfall during a severe mid 1980's winter, Leroy Brown (Idaho Helicopters Inc.) reported seeing large numbers of greater sage-grouse in the low elevation Wyoming sage types. In lower snowfall years, greater sage-grouse would have typically been seen higher up in the watershed near their leks (such as off the Ridge Road).

BLM and ODFW are both hopeful that more of this kind of locally important information will come to light through surveys and information that is known by various landowners.

Harvest– The conventional wisdom that high levels of harvest have little or no impact on greater sage-grouse populations (because most birds will die in the winter anyway) is being reconsidered by some researchers. Due to factors such as their low reproductive rates and high levels of winter survival, high levels of hunting probably do have an effect on populations.

The state has already recognized this potential effect on populations. In response to currently low populations ODFW allows a harvest level of less than 5% of the estimated annual production by issuing hunter tags and a season bag limit of two birds.

Part of the reason for the hunting season is to gather a random sample of the population by harvest. Wings turned in to ODFW by hunters can then be analyzed (sex and age) to determine performance of the population.

Factors Influencing Greater Sage-grouse Life History– A wide variety of factors have been reported to account for the changes in greater sage-grouse numbers such as:

- natural population fluctuations
- land treatments in sagebrush habitats (seedings, spray projects, prescribed fire)
- intense livestock grazing use
- water and fence development
- drought cycles
- cold and wet spring weather (mortality of chicks)
- crested wheatgrass seeding management
- wildfire and prescribed fire
- nest predation (ravens, coyotes, small mammals)
- predator control (suppression of coyote numbers)
- loss of habitat due to urban and agricultural development
- availability and abundance of jackrabbits, birds and squirrels (alternate food sources for predators that prey on greater sage-grouse such as coyotes and golden eagles)
- pesticide use (on agricultural lands, not grasshopper control)

It is the cumulative effects of these various factors occurring at different locations, scales, intensities, and time-frames that make greater sage-grouse management a challenge at their current low population levels. Research biologists are generally in agreement that no single factor is responsible for the current declines that are being observed. Nevertheless, there are substantive habitat centered measures BLM can take as a land managing agency which will help to conserve habitat for the species. (See Management Implications below).

Strutting Grounds (Leks)– During the courtship display period (strutting), greater sage-grouse seek out habitats with short vegetative structure such as low sagebrush flats, meadows and burms around reservoirs. The place where greater sage-grouse assemble for breeding is called a lek.

The low vegetation associated with leks allows males to be visible with one another, while at the same time they attract hens. Hens are attracted to males by a combination of odd display posturing, vocalizations and plumage coloration.

It is a common misnomer that "BLM needs to protect sagebrush cover on leks". Leks should in fact provide low vegetative cover and high visibility for breeding activity. The sagebrush cover immediately around leks is important for escape cover, nesting or winter use.

Greater sage-grouse typically return each year to the same leks so male attendance can be used as one measure of population trend, although it is definitely not the only measure.

In Malheur County, strutting takes place between late February and May; the peak of lek attendance tends to be in April. Systematic surveys of greater sage-grouse strutting grounds (leks) have been conducted each spring since the early 1980's. There are some limited strutting ground data available prior to this period, but the bulk of the information on hand begins in the early 1980's.

Since the 1980's lek survey work has been conducted as a collaborative effort between ODFW and BLM. Both agencies have pooled state and federal inventory dollars to maximize survey coverage. For the last several years $30,000 have been spent annually to gather lek count data and determine the overall breeding range of the species. Global positioning instruments are being used to locate leks making it easier to find them in subsequent counts.

Survey data has been compiled in such a way that both agencies now share a common database of information which indicates where strutting grounds are located and how many birds have been seen over the years. There is a GIS component and a tabular database component of this information which makes it a very powerful analytical tool for both agencies.

Nesting and Early Brood Rearing Habitat– Sagebrush, grasses and forbs all contribute towards good nesting habitat. Although greater sage-grouse may occasionally use other species of shrubs for nesting, they overwhelmingly prefer to nest under a big sagebrush canopy. Complexes of low sage and Wyoming sage have typically been viewed as the most productive greater sage-grouse nesting habitat in Malheur County.

Insects are an important source of high quality protein for chicks during their first few weeks of life. As chicks mature their diet shifts to a variety of forbs. Forbs are very important nutritionally for both adult and juvenile greater sage-grouse.

Research in Oregon and Idaho both indicate that grass height and lateral cover effect greater sage-grouse nest site selection and success. About 7 inches or more of herbaceous cover is associated with successful nesting because it helps hide nests from predators. Within greater sage- grouse breeding habitat, biologists believe that rangeland restoration with native grasses (bluebunch cultivars etc.) will offer better quality herbaceous nesting cover than crested wheatgrass.

Hens exhibit high fidelity to nesting grounds; in other words they return repeatedly to the same areas each year. A 15 to 25% or more canopy cover of sagebrush with a good herbaceous understory is associated with quality nesting habitat. Habitat with this kind of desirable nesting cover character often occurs in patches scattered throughout healthy rangelands.

Protection of sagebrush nesting habitat within two miles of leks has been a standard management recommendation for quite some time. Current research indicates that hens select for nesting habitat inside or outside of the two mile radius rather equally. In other words, the two mile lek "buffer" or "zone" may be no more or less important than other adjoining rangeland depending upon the existing cover conditions and their migratory habits. Consequently, sagebrush conservation which focuses too narrowly within the two mile radius may be inadequate to protect nesting habitat for the species.

Idaho research within Wyoming sage types showed that burning resulted in roughly a 30% greater sage-grouse population decline compared to an unburned "control" area nearby. This research is very significant because Wyoming sagebrush habitats are commonly affected by wildfire and they have often been target areas for controlled burns.

Late Summer Brood habitat– Hens and broods exhibit a wide tolerance for late summer habitat conditions. However, they still need

sagebrush escape cover to avoid predation and succulent forbs such as dandelions and hawks-beard continue to be important as food for both adults and young. It is typical for greater sage-grouse to move into riparian habitats and meadows during the mid to late summer and fall because of the availability of green forage and drinking water. As is the case for many species of wildlife, riparian areas are important for greater sage-grouse.

Alfalfa and native meadows on private land are important summer and fall habitats for greater sage-grouse in many parts of Malheur County. These areas are typically interspersed within Wyoming sagebrush types where they have nested.
High elevation greater sage-grouse summer and fall range in mountain sagebrush types are much less abundant than Wyoming sagebrush types in Malheur County. The Oregon Canyon Mountains, Cottonwood Mountain, upper elevations in the Bully Creek watershed and Parsnip Peak all support some mountain sage types.

Winter Habitat– Greater sage-grouse feed almost exclusively upon sagebrush during the winter. Where snow-free (typically wind blown) ridges are available they will often remain at fairly high elevations in low sagebrush. When they are driven off the ridges by heavy snowfall, it is very important to have 10%-25% canopy cover values of shrubs that are about 10"to 12" above the snow. Sagebrush canopy cover densities on winter range can be lower than what may be required on breeding ranges and still meet their habitat requirements.

Greater sage-grouse are somewhat adaptable in being able to find sagebrush for cover/forage in response to heavy snowfall conditions, but care must be taken to make sure their heavy snowfall winter habitats are not too fragmented by fire, seedings, or other factors.

Management Implications– Because of the well documented decline of greater sage-grouse throughout the west and the fact that they are a special status species (their habitats and populations could reach a point where the species requires protection under the Endangered Species Act) BLM and ranchers need to have open discussions about what is appropriate public land use management where greater sage-grouse are present. Greater sage-grouse are seasonally present on much of the public land in Malheur County.

There is enough research information available on this species to know that some kinds of management actions related to grazing use and land treatment need to be approached with caution and careful evaluation as to the potential effects. Some examples include:

(1) new pasture fences, water developments, or pipeline extensions for the purpose of grazing previously unused native range (within nesting habitat)
(2) temporary non-renewable grazing use on native range (within nesting habitat)
(3) general grazing season utilizations that are heavy and do not leave patchy un-grazed or lightly grazed areas for nesting.
(4) prescribed fire; especially where adjoining rangelands are fragmented from wildfires or seedings (within nesting habitat or winter range)
(5) some kinds of restoration or fire rehab seeding of depleted rangelands where a reasonable amount of shrub and forb component is not included in the seed mix
(6) complete re-treatments (burning, spraying, brush beating/mowing) of crested wheatgrass seedings (within nesting habitat or winter range)
Pro-active agreements or local conservation planning probably holds the best promise for avoiding potential problems and litigation which could be very time consuming, difficult, and costly for both the BLM and ranchers.

Next Steps– ODFW will be working on identifying various greater sage-grouse population matters.

BLM and ODFW both need a better characterization of existing sagebrush cover conditions and we will be exploring ways to get this information rapidly so it fits in with Rangeland Health evaluations.

ODFW and BLM will continue to fund systematic aerial searches in the Spring to find new leks and to repeat counts on a selected groups of leks that will reveal information about population trend

ODFW and BLM are already working on an updated greater sage-grouse distribution map.

Through user meetings and other means, help permittees, landowners and others to understand the typical behavior, habitat use and movements of greater sage-grouse throughout the year.

One final point. Greater sage-grouse are considered to be a good indicator of sagebrush habitat health. As the habitat needs of greater sage-grouse forage, structure, cover, security, and water are met many of the habitat needs of other animals at risk in sagebrush types should also be provided. This relationship is factored into the habitat management goals of the Southeast Oregon Resource Management Plan.

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